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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,657	05/26/2005	Toshio Kazama	AB-1387 US	9142

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MACPHERSON KWOK CHEN & HEID LLP
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EXAMINER

NGUYEN, VINH P

ART UNIT	PAPER NUMBER
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2829

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10/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/510,657

Applicant(s)

KAZAMA, TOSHIO

Examiner

VINH P. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10,11,13-15,18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,10,11,13-15,18 and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8,10-11,13-15,18,20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazama (Pat # 5,414,369) in view of Gabrielian (Pat # 4,029,375).

As to claims 1 and 10, Kazama discloses a contact probe assembly having a holder member comprising a plurality of layers (7,8,9) of support members and defining a plurality of holder holes (7a,8a,9a) passed across a thickness of said holder member, an electroconductive coil spring (13) received in each of said holder holes, each electroconductive spring (13) having a natural length in an uncompressed state, an electroconductive contact member (11,12) provided on either axial end of said coil spring (13), an engagement portion (an edge of openings (8a,7a) of the members "8,7" or an edge of openings (9a,7a) of the members "9,7") provided in each of said holder holes for preventing at least one of said contact members (11,12) from coming off from said holder hole (7a,8a,9a) and allowing a certain length of said one contact member projecting out of the corresponding holder hole (7a,8a,9a) and said electroconductive coil springs being installed in said holder holes (7a,8a,9a). It is noted that both ends of the coil spring (13) are soldered to both of the contact members (11,12) and the contact members (11,12) and coil spring (13) are disposed within the holder member. The device of Kazama does not mention about the coil spring (13) would extend by its natural length under a rest condition of the contact members (11,12).

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Gabrielian teaches that it would have been well known to use uncompressed springs as shown in figures 1,3-4 when the springs are not brought into contact with the conductive areas (5,7).

It would have been obvious for one of ordinary skill in the art to provide the uncompressed spring as taught by Gabrielian to the device of Kazama so that when the test is performed, the amount of applied force on the spring to the conductive test areas are under control so that the conductive test areas are not damage by the force.

As to claim 2, the contact members (11,12) on either axial end of each coil spring (13) comprises needle members (11,12).

As to claim 3, wherein a pair of engagement portions (an edge of an opening (8a) of the upper member "8" or an edge of an opening (9a) of the lower member "9") are provided in either axial end of each holder hole to prevent both of said needle members from coming off from said holder hole (7a,8a,9a).

As to claim 4, an engagement portion (an edge of an opening (9a) of the lower member "9") is provided in only one of two axial ends of each holder hole (7a,8a,9a) to prevent the corresponding needle member (12) from coming off the holder hole (7a,8a,9a).

As to claim 5, wherein said contact member (11) on one of said axial ends of each coil spring comprises a needle member (11a), and the contact member on the other axial end of said coil spring consists of a coil end of said coil spring(13), said engagement portion being provided in each holder hole only to prevent said needle member from coming off.

As to claim 6, wherein the engagement portion is provided in each of the holder holes (7a,8a,9a) for preventing only one of the contact members (12) for each of the coil spring (13)

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from coming off from the holder hole (7a,8a,9a), and the other contact member (11) is installed substantially flush with the outer surface of the holder member (7,8,9).

As to claim 7, wherein the engagement portion comprises a shoulder defined in each holder hole (7a,8a,9a).

As to claim 8, the shoulder is defined between adjoining two of the support members (7 & 8 or 7 & 9).

As to claim 11, the probe (11 or 12) comprises a flange portion (11b) having a first diameter adjacent the first electroconductive member (11a) and a second electroconductive member (12a) wherein the second contact member (12a) comprises a needle having a tip portions disposed on the second axial end.

As to claim 13, the first electrode contact member (11a) has a second diameter, and the engagement portion (11b) comprises a hole (8a) having a third diameter that is less than the first diameter of the flange portion (11b) and greater than the second diameter of the first member (11a).

As to claim 15, the coil spring (13) further comprises a closely wound portion (a part of the spring (13) connected to the flange portion (11b,12b) and a coarsely wound portion (center portion of the spring (13)).

As to claim 18, the engagement portion comprises a shoulder portion defined by a first hole ((8a) of a first diameter in a first adjoining layer (8 or 9) of the plurality of layered support members (7,8,9) and a second hole (7a) of a second diameter in a second adjoining layer (7) of the plurality of layered support members (7,8,9).

As to claim 20, Kazama discloses a contact probe assembly having a holder member comprising a plurality of layers (7,8,9) of support members and defining a plurality of holder holes (7a,8a,9a) passed across a thickness of said holder member, an electroconductive coil spring (13) received in each of said holder holes, each electroconductive spring (13) having a natural length in an uncompressed state, an electroconductive contact member (11,12) provided on either axial end of said coil spring (13), an engagement portion (an edge of openings (8a,7a) of the members "8,7" or an edge of openings (9a,7a) of the members "9,7") provided in each of said holder holes for preventing at least one of said contact members (11,12) from coming off from said holder hole (7a,8a,9a) and allowing a certain length of said one contact member projecting out of the corresponding holder hole (7a,8a,9a) and a circuit board layered (TAB "5") on a side of the holder member (7,8,9) facing away from the one contact member (11) and wherein said electroconductive coil springs being installed in said holder holes (7a,8a,9a). It is noted that both ends of the coil spring (13) are soldered to both of the contact members (11,12) and the contact members (11,12) and coil spring (13) are disposed within the holder member. The device of Kazama does not mention about the coil spring (13) would extend by its natural length under a rest condition of the contact members (11,12).

Gabrielian teaches that it would have been well known to use uncompressed springs as shown in figures 1,3-4 when the springs are not brought into contact with the conductive areas (5,7).

It would have been obvious for one of ordinary skill in the art to provide the uncompressed spring as taught by Gabrielian to the device of Kazama so that when the test is

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performed, the amount of applied force on the spring to the conductive test areas are under control so that the conductive test areas are not damage by the force.

As to claim 21, the contact members (11,12) on either axial end of each coil spring (13) comprises needle members (11,12).

As to claim 22, wherein an engagement portions (an edge of an opening (8a) of the upper member "8" or an edge of an opening (9a) of the lower member "9") is provided in only one of axial ends of each holder hole to prevent the corresponding needle member (12) from coming off from said holder hole (7a,8a,9a).

As to claim 23, wherein said contact member (11) on one of said axial ends of each coil spring comprises a needle member (11a), and the contact member on the other axial end of said coil spring consists of a coil end of said coil spring(13), said engagement portion being provided in each holder hole only to prevent said needle member from coming off.

As to claim 24, wherein the engagement portion is provided in each of the holder holes (7a,8a,9a) for preventing only one of the contact members (12) for each of the coil spring (13) from coming off from the holder hole (7a,8a,9a), and the other contact member (11) is installed substantially flush with the outer surface of the holder member (7,8,9).

As to claim 25, wherein the enegagement portion comprises a shoulder defined in each holder hole (7a,8a,9a)

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Banks (Pat # 6,095,823) disclose method of electrically connecting a component to a PCB.

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Swart et al (Pat # 6,204,680) disclose a test socket.

Fredrickson (Pat # 5,945,837) disclose an interface structure for an IC device tester.

Damon et al (Pat # 4,508,405) disclose an electronic socket having spring probe contact.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH P. NGUYEN whose telephone number is 571-272-1964.

The examiner can normally be reached on 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HA T. NGUYEN can be reached on 571-272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VINH P NGUYEN/
Primary Examiner
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